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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,014	06/01/2001	Theodore W. Nye	TRW(AP)5576	3227

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EXAMINER

ENGLISH, PETER C

ART UNIT	PAPER NUMBER
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3616

DATE MAILED: 06/11/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/873,014	NYE ET AL.	
	Examiner	Art Unit	
	Peter C. English	3616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-9 and 15 is/are allowed.
- 6) ☒ Claim(s) 1,2,10-14 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 27 May 2003 is: a) ☐ approved b) ☒ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 27 May 2003 has been entered.

Drawings

PZ
2/9/04

2. The proposed drawing correction filed on 27 May 2003 has been disapproved because reference number 176 has been omitted from ~~claim~~ ^{Fig.} 1. Note that this reference number is recited in the paragraph beginning at page 28, line 5. The proposed drawing correction would be approved if reference number 176 is added as shown on the attached marked-up copy of Fig. 1.

3. Corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

Specification

4. The specification is objected to for the reason given in item 5 of the previous Office action mailed on 30 August 2002. Appropriate correction is required. If the proposed drawing correction of Fig. 1 is corrected as indicated above, this objection to the specification would be overcome.

Claim Rejections - 35 USC § 112

5. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 16, at line 9, the term "the pre-crash condition" lacks proper antecedent basis. The examiner suggests: at line 9, change "pre-crash" to "impending crash".

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Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 10, 12, 14 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Maekawa et al. (US 5,765,774). Maekawa et al. discloses a seat belt system comprising: a seat belt 9 wound on a retractor 20; a reversible electric motor 10 that drives a spool 2 of the retractor 20; a controller 61 for controlling the motor 10; an obstacle sensor 66; and a skid sensor 67. When the sensors 66 and 67 do not produce an impending crash signal or a crash signal, the controller 61 operates the motor 10 to extend and retract the seat belt 9. This first mode of operation is illustrated in Fig. 4A from point “a” to point “l”, and is described at column 4, line 6 to column 5, line 10). In response to an impending crash signal from the sensor 66 or 67, the controller 61 operates the motor 10 to pretension the seat belt 9 by a first amount. This second mode of operation is illustrated in Figs. 4A and 4B from point “l” to point “p” and again from point “u” to point “w”, and is described at column 5, lines 11-24 and 33-38. In response to a crash signal from the sensor 67 or 66, the controller 61 operates the motor 10 to pretension the seat belt 9 by a second greater amount. This third mode of operation is illustrated in Fig. 4B from point “w” to point “x”, and is described at column 5, line 38-46. The motor 10 is considered to be an “electric” motor because it is driven by a piezoelectric array 11 (see column 3, lines 4-17), and is actuated by electrical signals from the controller 61.

8. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Behr (US 5,558,370). Behr discloses a seat belt system comprising: a seat belt retractor 14; an electric motor 12 that drives a spool of the retractor 14; a controller 20 for controlling the motor 12; an obstacle sensor 26; and a crash sensor 22. When the sensor 26 does not produce an impending crash signal and the sensor 22 does not produce a crash signal, the controller 20 operates the motor 12 to retract the seat belt (see column 3, line 44 to column 4, line 47). In response to an impending crash

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signal from the sensor 26, the controller 20 operates the motor 12 to pretension the seat belt by a first amount (see Steps 310 and 216 in Fig. 4; column 5, line 59 to column 6, line 15). In response to a crash signal from the sensor 22, the controller 20 operates the motor 12 to pretension the seat belt by a second greater amount (see Steps 222 and 224 in Fig. 4; column 5, lines 9-21). The motor 12 is considered to be an "electric" motor because it is described as a step motor (see column 3, line 1) that is activated or pulsed at a given power level (see column 4, line 8), and because it is actuated by electrical signals from the controller 20.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1, 2, 10-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frantom et al. (US 4,655,312) in view of Maekawa et al. (US 5,765,774) and Behr (US 5,558,370). Frantom et al. discloses a seat belt system comprising: a seat belt 10 wound on a retractor 14; a reversible electric motor 42 that drives a spool 282 of the retractor 14 via a gear assembly 284, 286; a controller 28 for controlling the motor 42; and a crash sensor 32 that supplies a crash signal to the controller 28. When no crash signal is produced by the sensor 32,

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the controller 28 operates the motor 42 to extend and retract the seat belt 10 (see column 5, lines 17-68). In response to a crash signal from the sensor 32, the controller 28 operates the motor 42 to pretension the seat belt 10 (see column 6, lines 1-9). For pretensioning the motor 42 is operated at a higher power level for a brief period (see column 5, lines 4-14).

Frantom et al. fails to disclose the degree to which the seat belt is pretensioned. As a result, Frantom et al. fails to disclose generating a pretensioning force sufficient to pull an occupant backward. As has already been discussed in detail above, Maekawa et al. and Behr both teach pretensioning a seat belt with a force sufficient to pull an occupant backward. From this teaching of Maekawa et al. and Behr, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frantom et al. by generating a pretensioning force sufficient to pull an occupant backward in order to properly position the occupant in his/her seat, thereby maximizing the protection provided by the seat belt as well as properly positioning the occupant for protection by supplemental restraint devices (e.g., air bags).

Frantom et al. also fails to disclose pretensioning the seat belt by an intermediate amount in response to an impending crash signal from an impending crash sensor. As has already been discussed in detail above, Maekawa et al. and Behr both teach pretensioning a seat belt by an intermediate amount in response to an impending crash signal from an impending crash sensor. From this teaching of Maekawa et al. and Behr, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frantom et al. by pretensioning the seat belt by an intermediate amount in response to an impending crash signal from an impending crash sensor in order to properly position the occupant in his/her seat in advance of a collision, thereby maximizing the protection provided by supplemental restraint devices (e.g., air bags).

Response to Arguments

12. Applicant's arguments filed on 27 May 2003 are moot in view of the new grounds of rejection.

Allowable Subject Matter

13. Claims 3-9 and 15 are allowed.

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Conclusion

14. The prior art cited is considered pertinent to applicant's disclosure. Swann et al. teaches an electric motor for pretensioning a seat belt when an impending collision is sensed in order to properly position an occupant in his/her seat.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter C. English whose telephone number is 703-308-1377. The examiner can normally be reached on Monday through Thursday (7:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul N. Dickson can be reached on 703-308-2089. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.


Peter C. English
Primary Examiner
Art Unit 3616

pe
June 9, 2003